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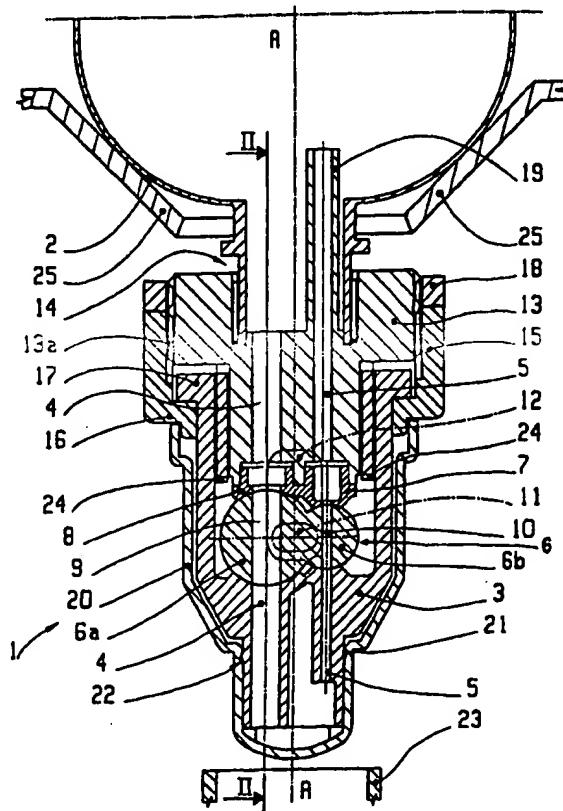
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<p>(21) International Application Number: PCT/EP99/03830</p> <p>(22) International Filing Date: 2 June 1999 (02.06.99)</p> <p>(30) Priority Data:</p> <table><tr><td>BO98A000349</td><td>2 June 1998 (02.06.98)</td><td>IT</td></tr><tr><td>MO98A000150</td><td>10 July 1998 (10.07.98)</td><td>IT</td></tr><tr><td>MO98A000151</td><td>10 July 1998 (10.07.98)</td><td>IT</td></tr></table> <p>(71) Applicant (for all designated States except US): WAX TECHNOLOGY S.A.S. DI RUGGERO CERA E.C. [IT/IT]; Via Marco Celio, 16/A, I-40132 Bologna (IT).</p> <p>(72) Inventor; and</p> <p>(75) Inventor/Applicant (for US only): CERA, Ruggero [IT/IT]; Via del Faggiolo, 2, I-40100 Bologna (IT).</p> <p>(74) Agent: LUPPI, Luigi; Luppi & Crugnola S.r.l., Via Corassori, 54, I-41100 Modena (IT).</p>			BO98A000349	2 June 1998 (02.06.98)	IT	MO98A000150	10 July 1998 (10.07.98)	IT	MO98A000151	10 July 1998 (10.07.98)	IT	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published Without international search report and to be republished upon receipt of that report.</p>
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(54) Title: SPOUT WITH VALVE FOR A GRAVITY DISPENSER

(57) Abstract

An apparatus (1) for dispensing a fluid from a container means (2) comprises a dispensing conduit (4), an air introduction conduit (5), a closure (6a), a closure for the air introduction conduit (5). The closure of the dispensing conduit (4) and those air introduction conduit are joined together. A method for dispensing a fluid enclosed in a container (2) comprises discharging said fluid from said container (2) by way of a dispensing conduit (4) and simultaneously introducing air into said container (2) by way of an air introduction conduit (5). The discharging process is performed by acting simultaneously on the closures (6a) for closing the dispensing conduit (4) and the air introduction conduit (5). A support (31) for supporting an elongated element (32), characterised in that proximity of one end of the elongated element (32), it has a constraining element (33) to which there can be connected a set of at least three rods (34) distributed around the longitudinal direction (35) of said elongated element (32), a first end of said rods (34) being hinged to said constraining element (33) in such a way as to oscillate angularly relative to the longitudinal direction between an inoperative closed limit condition and an operative open position supporting said elongated element.



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SPOUT WITH VALVE FOR A GRAVITY DISPENSER

The invention relates to an apparatus for dispensing a fluid product and to a supporting means.

The prior art comprises bottles containing water or other drinks, which are discharged after the opening on the neck of the bottle has been freed from a cap serving to close said opening.

Removal of the cap requires the use of both hands, which can constitute a problem, particularly for handicapped or elderly persons or for persons who have difficulty in moving their arms.

Furthermore the cylindrical body of the bottle is not easy to grasp, which makes it difficult to pour out the contents by tipping up the bottle.

The prior art further comprises supporting means used in numerous technical fields, such as tripods with fixed or hinged rods, which are widely used as supporting apparatuses for providing self-sustaining support to the most varied objects and hence providing the supported objects with a stable resting base: examples include supports for photographic cameras, cine-cameras, optical instruments and so on. Such tripod accessories are structured according to their specific applications and are designed in such a way that they sometimes have technical features and a choice of construction materials that make their cost not entirely negligible and therefore justifiable solely for certain specific uses of said accessories.

Conversely, when not in use said tripods need to be detached from the object they support since they are cumbersome and constitute a certain hindrance for non-stationary uses of the supported object.

On the other hand, there is a frequent and widely felt need for accessories that provide self-sustaining support for common and cheap utensils in widespread daily use, such as brooms or equivalent utensils with an extended handle, which, not being self-supporting in a vertical condition, must be either laid on a horizontal surface or rested against a vertical wall or an equivalent supporting element or hung up by way of corresponding hooks during pauses in use.

In addition, there is a frequent and widely felt need for accessories that provide self-sustaining support for walking aid means, such as walking sticks or crutches, which, not being self-supporting in a vertical condition, must be either laid on a horizontal surface or rested against a vertical wall or an equivalent supporting element or hung up during pauses in use.

A first object of the present invention is to improve existing systems for dispensing fluids.

A further object of the present invention is to simplify the operations required for discharging and interrupting the discharge of a fluid from a container means.

Another further object of the present invention is to allow dispensing of a fluid enclosed in a container means to be performed or interrupted using just one hand.

Another object of the present invention is to provide a general-purpose supporting means for supporting an elongated element in a longitudinal direction, in particular the handle of a broom, a mop, a shovel or other equivalent utensil, in a self-sustaining manner in a vertically oriented condition; when not in use, this supporting means does not need to be detached from the object which it is to support and must not constitute a hindrance to normal use of the object.

Still another object of the present invention is to provide a walking aid means which can be stably maintained in a vertical position when its use is not required. A first aspect of the present invention relates to an apparatus for dispensing a fluid from a container means, comprising a dispensing conduit means for dispensing said fluid, an air introduction conduit means for introducing air into said container means, a closure means for closing said dispensing conduit means and a closure means for closing said air introduction conduit means, characterised in that said closure means for closing said dispensing conduit means and said closure means for closing said air introduction conduit means are joined together.

The closure means can be coupled to an actuating means that can be operated from outside.

A second aspect of the present invention relates to a method for dispensing a fluid enclosed in a container means, comprising:

- discharging said fluid from said container means by way of a dispensing conduit means and simultaneously introducing air into said container means by way of an air introduction conduit means;
- interrupting said discharging and said introducing operations by way of a closure means for closing said dispensing conduit means and a closure means for closing said air introduction conduit means, characterised in that said discharging, said introducing and said interrupting operations are performed by acting simultaneously on said closure means for closing said dispensing conduit means and on said closure means for closing said air introduction conduit

performed by acting simultaneously on said closure means for closing said dispensing conduit means and on said closure means for closing said air introduction conduit means.

Said closure means can be actuated by acting on an actuating means that can be operated from outside and is coupled to said closure means.

In a particularly advantageous embodiment, the actuating means comprises an oscillating lever.

This way, the act of pouring, for example of water into a glass, is particularly simple and does not pose a problem even for people who have difficulty in moving their arms.

A third aspect of the present invention relates to a supporting means for supporting an elongated element, characterised in that in the proximity of one end of the elongated element it has a constraining element to which there can be connected a set of at least three rods distributed around the longitudinal direction of said elongated element, a first end of said rods being hinged to said constraining element in such a way as to oscillate angularly relative to the longitudinal direction between an inoperative closed limit condition and an operative open position supporting said elongated element.

A fourth aspect of the invention relates to a walking aid means including said supporting means.

The rods may be conveniently contained in a tubular holder having a first end which can be associated with the elongated element and a second opposite end into (and from) which the rods can be respectively inserted and extracted.

There may also be envisaged a translation means for making the hinged ends of the rods translate relative to the holder both ways in the longitudinal direction between said limit conditions, in the first condition of which the rods are retracted inside the holder and in the other limit condition the rods project from the holder through said slits.

The invention may be better understood and implemented with reference to the enclosed drawings, which represent some exemplifying and non-limiting forms of construction in which:

Figure 1 is a longitudinal section of an apparatus for dispensing fluid products;

Figure 2 is a section taken along II-II in Figure 1, showing a closure means in the positions of outflow and shut-off of respective conduit means;

Figure 3 is a longitudinal section of a second embodiment of the apparatus for dispensing fluid products;

Figure 4 is a section taken along IV-IV in Figure 3;
Figure 5 is a longitudinal section of a closure cap which may be associated to the second embodiment of the apparatus shown in Figures 3 and 4;
Figure 6 is a schematic and interrupted longitudinal section of one end of a walking stick, a crutch, a handle of a broom, a mop, a shovel or other equivalent utensil, equipped with a retracting supporting means;
Figure 7 is a longitudinal assembly view of the supporting means illustrated in a first embodiment in a configuration of usage;
Figures 8, 9 and 10 illustrate a second constructional variant of the supporting means of Figure 1, represented in a cross-sectional view respectively: in a non-operative configuration; in a configuration preparatory to usage; and in a configuration of usage;
Figure 11 is a view from below of the supporting means shown in Figure 5;
Figure 12 is a longitudinal section of a further constructional variant of the supporting means in a non-operative configuration;
Figure 13 is a longitudinal section of a further embodiment of an apparatus for dispensing fluid products, according to the invention.

Referring to Figures 1 and 2, an apparatus 1 for dispensing water or some other drink contained in a bottle 2 and intended to be collected in a glass 23 comprises a nozzle means 3 which internally contains a conduit means 4 for dispensing water and a conduit means 5 for introducing air into the bottle 2.

The conduit means 4 and 5 are parallel to each other and to a longitudinal axis A-A of the apparatus 1.

The conduit means 4 and 5 are able to switch from a closed condition to an open condition and vice versa by way of closure means 6, comprising a closure means 6a for closing the dispensing conduit means 4 and a closure means 6b for closing the air introduction conduit means 5. These closure means 6a and 6b are joined together and have substantially spherical outer surfaces and internally are provided with cylindrical cavities 9 and 10 capable of constituting portions of the conduit means 4 and 5 respectively. The closure means 6 can be rotated by way of an externally operatable lever 11 so as to orient the cavities 9 and 10 in such a way as to interrupt or restore communication between the remaining upper and lower portions of the conduit means 4 and 5. The nozzle means 3 has a guide opening 12 that allows the lever 11 to be rotated from a position in which water is dispensed to a position in which the apparatus 1 is in a closed condition. The top of the closure means 6 is coupled with seals 7 and

8 to prevent leakage of water; said seals 7 and 8 are kept pressed against the means 6 by a pressing means 13 screwed onto the neck 14 of the bottle 2. During use, the bottle is supported by a support means 25 which keeps it in a tilted position (namely with the neck 14 pointing downwards). A lateral surface portion of the pressing means 13 has external threading 13a capable of permitting coupling with a ring nut means 15 which is provided with an inwardly projecting lower edge 16 that is capable of engaging with a corresponding outwardly projecting upper edge 17 of the nozzle means 3. This way, by screwing the ring nut means 15 onto the pressing means 13, the nozzle means 3 and consequently the closure means 6 and the seals 7 and 8 are tightened against the pressing means 13 in such a way as to reach an optimal condition in which the seals 7 and 8 prevent the leakage of water and the closure means 6 is nonetheless able to rotate without difficulty. In order to maintain this condition, a lock nut unscrew prevention means 18 is screwed onto the pressing means 13 until it locks against the ring nut means 15. Between the pressing means 13 and the nozzle means 3 there is peripherally interposed a longitudinal guide means 24 capable of preventing relative rotation between the nozzle means 3 and the pressing means 13 while the ring nut means 15 is being screwed onto the pressing means 13, while permitting reciprocal translation along the axis A-A. On the neck 14 of the bottle 2, the pressing means 13 has a protuberance 19 which extends inside the bottle 2 and constitutes an extension of the air introduction conduit means 5; this creates a lower pressure at the entrance to the air introduction conduit means 5 than at the entrance to the water dispensing conduit means 4. This causes the air to rise through the conduit means 5 and the water to descend through the conduit means 4. The apparatus 1 advantageously has a removable cap 20 which can be coupled with the nozzle means 3, which externally has a circular tooth 21 capable of engaging with a corresponding groove 22 inside the cap 20. Application of this cap 20 when the apparatus 1 is not being used allows said apparatus to be maintained in a good hygienic condition.

Figures 3 and 4 illustrate an apparatus 101 for dispensing water or some other drink contained in a bottle 2. The apparatus 101 comprises a nozzle means 103 which internally contains a conduit means 104 for dispensing water and a conduit means 105 for introducing air into the bottle 2.

The conduit means 104 and 105 are parallel to each other and to a longitudinal axis A-A of the apparatus 101.

The conduit means 104 and 105 are able to switch from a closed condition to an open condition and vice versa by way of closure means 106, comprising a closure means 106a for closing the dispensing conduit means 104 and a closure means 106b for closing the air introduction conduit means 105. These closure means 106a and 106b are joined together and have substantially spherical outer surfaces and internally are provided with cylindrical cavities 109 and 110 capable of constituting portions of the conduit means 104 and 105 respectively. The closure means 106 can be rotated by way of an externally operatable forked lever 111 so as to orient the cavities 109 and 110 in such a way as to interrupt or restore communication between the remaining upper and lower portions of the conduit means 104 and 105. The nozzle means 103 has opening 112a and 112b through which respective pins 113a and 113b of the forked lever 111 pass. The pins 113a and 113b are connected, respectively, to the closure means 106a for closing the dispensing conduit means 104 and to the closure means 106b for closing the air introduction conduit means 105. The forked lever may be rotated, from a first position in which water is dispensed to a second position in which the apparatus 101 is in a closed condition, by means of a slid able driving element 114, connected at one end to an extension 115 of the forked lever 111 and provided with a handgrip 116 at the opposite end. The handgrip 116 protrudes from a slit 140 of a supporting and guiding member 139, connected to the nozzle means 103 for supporting and guiding the drive element 114. The first position of the forked lever 111 is indicated with the reference numeral 111a in Figure 4, whilst the second position is indicated by the reference numeral 111b in Figure 4. The corresponding positions of the extension 115 and the handgrip 116 are indicated, respectively, with the reference numerals 115a, 115b and 116a, 116b, in Figure 4.

The top of the closure means 106 is coupled with seals 107 and 108 to prevent leakage of water and the bottom of the closure means 106 rests on resting elements 117 and 118. The seals 107 and 108 are kept pressed against the means 106 by a pressing means 119 which may be screwed onto the nozzle 103.

The pressing means 119 is provided with a dispensing conduit 120 and an air conduit 121 which constitute, respectively, continuation of the dispensing conduit means 104 and air introduction conduit means 105 and terminate in a cavity 122 of the pressing means 119.

The cavity 122 is able to fit with a male coupling 123 screwed on the neck 14 of the bottle 2. The male coupling 123 is provided with a further dispensing conduit 126 and a further air conduit 125 which constitute continuation of the dispensing conduit 120 and the air conduit 121, respectively.

The male coupling 123 has a pipe 138 which extends inside the bottle 2 and constitutes an extension of the further air conduit 125; this creates a lower pressure at the entrance to further air conduit 125 than at the entrance to the further dispensing conduit 124. This causes the air to rise through the air introduction conduit means 105, the air conduit 121 and the further air conduit 125 and the water to descend through the further dispensing conduit 126, the dispensing conduit 120 and the dispensing conduit means 104.

The male coupling 123 is provided with peripheral grooves 127 capable of fitting with locking means 128, 129, for instance at least a pair of retractable teeth, protruding towards the inside of the cavity 122 and capable of securing a stable connection between the male coupling 123 and the cavity 122 of the pressing means 119 and a correct alignment of the dispensing conduit 120 and the air conduit 121 with the further dispensing conduit 126 and the further air conduit 125, respectively. The locking means 128, 129 may be retracted acting on a pair of slidable elements 130 and 131 of the pressing means 119, in order to disengage the male coupling 123 from the cavity 122.

The male coupling 123 is further provided with a peripheral gasket 124 to prevent leakage of the liquid contained in the bottle, when the male coupling 123 is connected with the pressing means 119.

Figure 5 illustrates a cap 132 which may be inserted onto the male coupling 123 to close the bottle 2 when the dispensing apparatus 101 is not being used.

The cap 132 has a cavity 133 capable to fit with the male coupling 123. A pair of retractable teeth 134 and 135 protrude towards the inside of the cavity 133. The retractable teeth 134 and 135 are capable of fitting with the peripheral groove 127 of the male coupling 123, in order to secure a stable connection between the male coupling 123 and the cap 132. The retractable teeth 134 and 135 may be retracted acting on a pair of slidable elements 136 and 137 of the cap 132, in order to disengage the male coupling 123 from the cap 132.

Figure 13 illustrates a further embodiment of an apparatus 201 for dispensing fluid products, according to the invention.

The apparatus 201 comprises a nozzle means 203 which internally contains a dispensing conduit means 204 for dispensing a fluid product and an air

introduction conduit means 205 for introducing air into the container.

The nozzle means 203 are provided with a fluid opening 206 for passage of the fluid product and an air opening 207 for passage of air. Said fluid opening 206 communicates with said dispensing conduit means 204 and said air opening 207 communicates with said air introduction conduit means 205.

The nozzle means 203 is rotatably mounted in a bush 208 provided with a fluid inlet conduit 209 having an axis substantially perpendicular to the axis of the nozzle 203. The fluid inlet conduit 209 may be coupled to the spout 210 of a container by means of an angled pipe-fitting 213, so that the axis of the nozzle 203 is substantially parallel to the axis of the spout 210. There are provided connecting means 211 and 212 for connecting the pipe-fitting 213 to the fluid inlet conduit 209 and the spout 210. Said connecting means 211 and 212 are provided with sealing means 215 and 216 for preventing leakage of fluid from the connecting means 211 and 212. An air conduit 214 is arranged at the inside of the fluid inlet conduit 209 and extends through the fluid inlet conduit 209, the angled pipe fitting 213 and the spout 210 of the container. The nozzle means 203 may be rotated, for instance by an operating lever, not shown, from a first position, in which the fluid opening 206 is aligned with the fluid inlet conduit 209 and the air opening 207 is aligned with the air conduit 214, to a second position, in which a wall 217 of the nozzle means 203 closes the inlet of the fluid inlet conduit 209 and the inlet of the air conduit 214. When the nozzle means 203 is in said first position the fluid inlet conduit 209 communicates, through the fluid opening 206, with the dispensing conduit means 204, thus allowing the fluid in the container to be dispensed through the nozzle means 203 and the air conduit 214 communicates, through the air opening 207, with the air introduction conduit means 205, thus allowing air from the outside to enter into the container through the nozzle means 203. When the nozzle means 203 are in said second position, the wall 217 prevents the fluid in the container from being dispensed through the nozzle means 203 and air from the outside from entering into the container through the nozzle means 203.

Figure 6 illustrates a supporting means, indicated in its entirety as 31, for stably supporting an elongated element 32, such as a walking stick a crutch, a handle of a broom, a mop, a shovel or other equivalent utensil, in a vertically oriented condition in a longitudinal direction 35.

The supporting means 31 essentially comprises a tubular holder 37 which can be associated with the elongated element 32 and contains at least three rods

34, joined to each other and uniformly angularly distributed around the longitudinal direction 35. The tubular holder 37 is provided in particular with a first end 38 through which there passes an actuating means 38a, for instance a tie-rod, for projection and reintroduction of the rods 34. The actuating means 38a is associated with a constraining element 33 for the rods 34. The actuating means 38a may be integrated with the elongated element 32. The holder 37 is fixed to the elongated element 32 in such a way as to ensure that the rods are covered in any position of the elongated element 32. The elongated element 32 may further comprise a tip 32a for resting on the ground which may optionally be provided with notches for receiving the rods 34 when they are made to project from or are reintroduced into the holder 37.

As shown in Figure 7, the end 38 is cylindrical, open and shaped in a complementary manner to the elongated element 32 in such a way as to receive it axially by way of a coupling effected through an axial movement in the longitudinal direction 35.

The holder 37 is further provided with a second opposite closed end 39 traversed by slits 40, distributed on the flat edged profile of said end 39 around the longitudinal direction 35.

The rods 34 are rectilinear and are positioned facing the slits 40 in the holder 37 and have a cross-section that corresponds to the shape of the slits 40; a first end 36 of said rods is also hinged to the collective constraining element 33 which in this specific case is represented by a sliding element 44 contained in the holder 37 and slidably mounted in a guided manner with the possibility of translating freely both ways in the longitudinal direction 35.

In use, the supporting means 31 is arranged as shown in Figure 7, namely with the elongated element 32 pointing upwards and the holder 37 pointing downwards. In this condition, the weight of the sliding element 44 and the rods 34 together with the alignment condition of said rods 34 with the slits 40 on the lower end 39 of the holder 37 allows the rods 34 to project from the holder 37 as far as the limit condition determined by the arrest of the sliding element 44 against the closed end 39 of the holder 37. As a consequence of the hinged connection between the first ends 36 of the rods 34 and the sliding element 44, which allows the rods 34 to oscillate angularly relative to the longitudinal direction 35, the rods 34 can be opened manually simply by gravity or forcibly under the action of optional torsion springs 60 – see Figure 4 – arranged around the hinging pins 36p on the first ends 36 of the rods 34 in order to

assume their operative condition supporting the object to which the aforementioned elongated element 32 belongs.

In the embodiment shown in Figure 6, the movements of the constraining element 33 for projection and reintroduction of the rods 34 are generated by corresponding movements of the tie-rod 38a in a direction parallel to the direction 35. The movement of the tie-rod 38a causing the rods 34 to project may occur with a snap mechanism under the action of a spring, which is not shown, the return movement to the initial position being performable by acting manually on the tie-rod 38a, and extraction of the rods controlled by a button which may optionally be incorporated in the grip and is not shown.

Alternatively, the rods 34 may be extracted due to the manual action of the tie-rod 38a and caused to re-enter by a return spring.

The rods 34 may be extracted by providing the supporting means 31 with an elastic reaction means 45 (figure 7) which structurally co-operates with the holder 37 and the rods 34.

For this purpose, a spring 45 is located inside the tubular holder 37 in an intermediate position between a reaction wall 46a inside the holder 37 and the sliding element 44. In this case the spring 45 constantly pushes the rods 34 towards the closed end 39 of the holder 37 in such a way that the fact of allowing the holder 37 to rotate around the longitudinal direction 35 in order to align or conversely disalign the slits 40 with or from the rods 34 correspondingly allows the rods 34 to be extracted from or conversely kept retracted into the holder 37.

The rods 34 can be made to retract into the holder 37 by acting on the free end 49 of the rods 34 against the force of the spring 45 by way of an optional holding appendix 49a (Figure 12) designed in such a way as to be able to push the rods 34 into the holder 37 beyond the slits 40. The holding appendix 49a is positioned on the free end 49 (the second end) of one of the rods 39 and is shaped in such a way as to be accessible from the outside of the supporting means 31 even when the rods 34 are retracted inside the holder 37 in their inoperative condition.

In the constructional variant of the supporting means shown in Figures from 8 to 10, the first end 38 of the tubular holder 37 is slidably mounted in a longitudinally guided manner on the elongated element 32, while the connecting element 33 of the rods 34 is in this case fixed and is connected to one end of the elongated element 32.

The elastic reaction means 45 consists of a spring which is housed inside the tubular holder 37 peripherally enclosing the elongated element 32 and is interposed between a reaction wall 46b of the holder 37 and a corresponding projection 46c of the constraining element 33 of the rods 34.

As regards the closed end 39 of the tubular holder 37, from the aforementioned figures it will be immediately clear that in the present form of implementation of the supporting means 31, the end 39 comprises a fixed sleeve 41 provided with a first series of slits 40a facing the rods 34 and a cap 42 (Figure 11) mounted with a rotary coupling on the sleeve 41 and provided with a second series of facing slits 40b, said cap 42 being rotatably actuatable around the longitudinal direction 35 in order to align or conversely disalign the slits 40a and 40b according to the desired operative or inoperative condition of the rods 34. Incidentally it may also be observed that the cap 42 can additionally be provided with an element for actuating its rotation which at the same time can constitute a hooking element 43 allowing the supporting means 31 to be suspended and maintained in a suspended condition.

It should finally be observed that the holder 37, slidably coupled to the connecting element 33 of the rods 34, is mounted on the elongated element 32 making it possible to obtain a translation means which allows the rods 34 to translate relative to the holder 37 as an alternative to the solution involving the mobile sliding element 44 inside the fixed holder 37.

As regards the use of the described variant, from a comparative observation of Figures 8 and 10 it can immediately be noted that in order to make the rods 34 project from the holder 37 it is sufficient to rotate the cap 42 until the slits 40a and 40b are aligned; conversely, to make the rods 34 retract into the holder 37 it is sufficient to impart a reciprocally separating movement to the holder 37 and the elongated element 32 in the longitudinal direction 35, and then rotate the cap 42 so that the slits 40a and 40b are mutually disaligned. In the variants described above, reference has been made to a simple fit coupling between the elongated element 32 and the first end 38 of the holder 37 to allow the supporting means 31 to be connected to the supported object. Clearly, by altering the nature of the construction material of the holder 37 and the dimensions of the first end 38 it is possible to create coupling conditions with elastic interference, thereby assuring a stable connection between the supporting means 31 and the supported elongated element 32. A further improvement to the supporting means 31 could in any case be advantageously

obtained in the manner shown in Figure 12 by providing the supporting means 31 with a forced clamping means 47, 48 operating between the holder 37 and the elongated element 32 and in particular comprising a tubular body 47 which can be axially coupled between the first open end 38 of the holder 37 and the elongated element 32 and a ring nut 48 engaged with said first end 38 in order to radially force the tubular body 47 and hence clamp together the holder 37 and the elongated element 32.

The supporting means 31 may be used for supporting a wide range of objects such as, for instance, handles of paint rollers; handles of paint brushes; handles of tools for removing spider webs; handles of feather-dusters; handles of tools for washing glasses; handles of shovels, rakes and hand tools in general; poles for handling garments in a wardrobe; poles for opening and closing dormer windows; fishing rods; handles of landing nets.

In addition, the supporting means 31 according to the invention may be integrated into an umbrella or a parasol, into a portable stool; steady or portable candlesticks; musical instrument bearers.

Furthermore the supporting means 31 may be used as universal supporting means for golf umbrellas, golf clubs, umbrellas, parasols, music stands, reading stands, object stands.

The supporting means 31 according to the invention may be used for supporting wind-proof torches, electric torches, bottles or a dispensing apparatus 1 according to the invention.

The supporting means 31 according to the invention may be equipped with pliers to obtain a multipurpose supporting means.

In addition, the elongated element 32 of the supporting means 31, may be equipped with a magnetic tip allowing the supporting means 31 to be leaned on a metallic surface.

The invention thus conceived is open to numerous modifications and variants, all of which come within the conceptual scope of the invention. Furthermore, all parts may be replaced by technically equivalent elements.

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CLAIMS

1. Apparatus (1; 101; 201) for dispensing a fluid from container means (2), comprising a nozzle means (3; 103; 203) provided with dispensing conduit means (4; 104; 204) for dispensing said fluid, air introduction conduit means (5; 105; 205) for introducing air into said container means (2), characterised in that at least a portion of said dispensing conduit means (4; 104; 204) and said air introduction conduit means (5; 105; 205) is parallel to an axis of a spout (14; 210) of said container means (2) and an axis of said nozzle means (3; 103; 203).
2. Apparatus (1; 101) according to claim 1, and further comprising closure means (6a; 106a) for closing said dispensing conduit means (4; 104) and closure means (6b; 106b) for closing said air introduction conduit means (5; 105), said closure means (6a; 106a) for closing said dispensing conduit means (4; 104) and said closure means (6b; 106b) for closing said air introduction conduit means (5; 105) being joined together.
3. Apparatus (1; 101) according to claim 2, wherein said closure means (6a, 6b; 106a, 106b) have cavities (9, 10; 109, 110) that constitute portions of said conduit means (4, 5; 104, 105).
4. Apparatus (1; 101) according to claim 2 or 3, wherein said closure means (6a, 6b; 106a, 106b) can be rotated by way of a common actuating means (11; 111) which can be operated from outside.
5. Apparatus (1; 101) according to any preceding claims, wherein said closure means (6a, 6b; 106a, 106b) are coupled at the top with seals (7, 8; 107, 108) for preventing leakage of said fluid.
6. Apparatus (101) according to any preceding claims, wherein said closure means (106a, 106b) are coupled at the bottom with resting elements (117, 118).
7. Apparatus (1; 101) according to any one of the preceding claims, wherein said conduit means (4, 5; 104, 105) pass through nozzle means (3; 103)

located on one side of said closure means (6a, 6b; 106a, 106b).

8. Apparatus (1; 101) according to any preceding claims, and further comprising pressing means (13; 119) capable of pressing said seals (7, 8; 107, 108) against said closure means (6a, 6b; 106a, 106b).

9. Apparatus (1) according to claim 8, wherein, on another side of said closure means (6a, 6b), said conduit means (4, 5) pass through said pressing means (13).

10. Apparatus (1) according to claim 8, or 9, wherein said pressing means (13) can be coupled with an outlet opening of said container means (2).

11. Apparatus (1) according to one of claims 8 to 10, wherein said pressing means (13) has a threaded section on a portion of its lateral surface.

12. Apparatus (1) according to claim 11 and further comprising ring nut means (15) capable of being screwed onto said pressing means (13).

13. Apparatus (1) according to claim 12, wherein said ring nut means (15) has an inwardly projecting lower edge (16).

14. Apparatus (1) according to claim 13, wherein said lower edge (16) is capable of engaging with a corresponding externally projecting upper edge (17) of said nozzle means (3).

15. Apparatus (1) according to one of claims 8 to 14, wherein between said pressing means (13) and said nozzle means (3) there is interposed a longitudinal guide means (24) capable of permitting reciprocal translation but preventing reciprocal rotation between said pressing means (13) and said nozzle means (3).

16. Apparatus (1) according to any preceding claims, wherein the top of said pressing means (13) has a protuberance (19) constituting an extension of said air introduction conduit means (5).

17. Apparatus (1; 101) according to any preceding claims and further comprising a support means (25) capable of maintaining said container means (2) in a position with its outlet opening pointing downwards during use.
18. Apparatus (1) according to any preceding claims and further comprising a removable cap (20), which can be coupled with said nozzle means (3).
19. Apparatus (1) according to claim 18, wherein said removable cap (20) is provided internally with a groove (22) capable of being engaged by a corresponding tooth (21) located on the external surface of said nozzle means (3).
20. Apparatus (101) according to claim 4, wherein said common actuating means (111) are actuated by a slidable driving element (114), connected at one end to said common actuating means (111) and provided with a handgrip (116) at the opposite end.
21. Apparatus (101) according to claim 20, wherein said handgrip (116) protrudes from a slit (140) of a supporting and guiding member (139) connected to said nozzle means (103).
22. Apparatus (101) according to one of claims 8, 20, 21, wherein said pressing means (119) is provided with a dispensing conduit (120) and an air conduit (121) which constitute, respectively, continuation of the dispensing conduit means (104) and air introduction conduit means (105).
23. Apparatus (101) according to one of claims 8, 20, 21, 22, wherein said pressing means (119) may be screwed on said nozzle means (103).
24. Apparatus (101) according to one of claims 8, 20, 21, 22, 23 wherein said dispensing conduit (120) and said air conduit (121) terminate in a cavity (122) of the pressing means (119).
25. Apparatus (101) according to claim 8, or one of claims 20 to 24, and further comprising a coupling element (123) which may be coupled with the neck (14) of the bottle (2).

26. Apparatus (101) according to claim 25, wherein said coupling element (123) is insertable into said cavity (122).

27. Apparatus (101) according to claim 26, wherein said pressing means (119) is provided with locking means (128, 129) capable of locking said coupling element (123) into said cavity (122) and arranged in such a way as to guarantee a correct alignment of said dispensing conduit (120) and said air conduit (121) with a corresponding further dispensing conduit (126) and a corresponding further air conduit (125), respectively, provided in said coupling element (123).

28. Apparatus (101) according to claim 27, wherein said locking means comprises at least a pair of retractable teeth (128, 129) protruding towards the inside of said cavity (122).

29. Apparatus according to claim 28, wherein said coupling element (123) is provided with peripheral grooves (127) capable of being engaged by said retractable teeth (128, 129).

30. Apparatus (101) according to claim 27, or 28, wherein said pressing means (119) is provided with retracting means (130, 131) for causing retraction of said retractable teeth (128) from said cavity (122).

31. Apparatus (101) according to claim 8, or one of claims 20 to 30, and further comprising a cap (132) which may be coupled with said coupling element (123).

32. Apparatus (101) according to claim 31, wherein said removable cap (132) is provided with a cavity (133) into which said coupling element (123) may be fitted.

33. Apparatus (101) according to claim 32, wherein said removable cap (132) is provided with locking means (134, 135) capable of locking said coupling element (123) into said cavity (133).

34. Apparatus (101) according to claim 33, wherein said locking means comprises at least a pair of retractable teeth (134, 135) protruding towards the inside of said cavity (133) and capable of engaging said peripheral grooves (127).

35. Apparatus (101) according to claim 34, wherein said removable cap (132) is provided with retracting means (136, 137) for causing retraction of said retractable teeth (134, 135) from said cavity (133).

36. A removable cap (132) which may be coupled with a coupling element (123) insertable onto the neck (14) of a container (2), said removable cap being provided with a cavity (133) into which said coupling element (123) may be fitted, characterised in that it comprises locking means (134, 135) capable of locking said coupling element (123) into said cavity (133).

37. A removable cap (132) according to claim 36, wherein said locking means comprises at least a pair of retractable teeth (134, 135) protruding towards the inside of said cavity (133) and capable of engaging peripheral grooves (127) of said coupling element (123).

38. A removable cap (132) according to claim 37, and further comprising retracting means (136, 137) for causing retraction of said retractable teeth (134, 135) from said cavity (133).

39. A method for dispensing a fluid enclosed in container means (2) comprising:

- discharging said fluid from said container means (2) by way of dispensing conduit means (4) and simultaneously introducing air into said container means (2) through air introduction conduit means (5);
- interrupting said discharging and said introducing by way of closure means (6a) for closing said dispensing conduit means (4) and closure means (6b) for closing said air introduction conduit means (5), characterised in that said discharging, said introducing and said interrupting are performed by acting simultaneously on said closure means (6a) for closing said dispensing conduit means (4) and on said closure means (6b) for closing said air introduction conduit means (5).

40. A method according to claim 39, wherein said discharging, said introducing and said interrupting are performed by acting on actuating means (11) which can be operated from outside and is coupled to said closure means (6a, 6b).

41. A method according to claim 39 or 40 and further comprising supporting said container means (2) in such a way that it has an outlet opening pointing downwards.

42. Support means (31) for supporting an elongated element (32), characterised in that in the proximity of one end of the elongated element (32) said support means (31) has a constraining element (33) to which there can be connected a set of at least three rods (34) distributed around a longitudinal direction (35) of said elongated element (32), a first end of said rods (34) being hinged to said constraining element (33) in such a way as to oscillate angularly relative to the longitudinal direction between an inoperative closed limit condition and an operative open limit condition supporting said elongated element (32).

43. Support means (31) according to claim 42 and further comprising a tubular holder (37) containing the rods (34) and having a first open end (38) which can be associated with the elongated element (32) and a second opposite closed end (39) traversed by slits (40) facing the rods (34); and a translation means (44; 37, 33) to make the hinged ends (36) of the rods (34) translate relative to said holder (37) both ways in the longitudinal direction (35) between said limit conditions, in the first condition of which the rods (34) are retracted inside the holder (37) while in the other limit condition the rods (34) project from the holder (37) through said slits (40).

44. Support means (31) according to claim 43, wherein said tubular holder (37) is rotatably mounted around the longitudinal direction (35) in order to align or disalign its slits (40) relative to the rods (34).

45. Support means (31) according to claim 44, wherein said closed end (39) of the tubular holder (37) comprises a fixed sleeve (41) provided with a first

series of slits (40a) facing the rods (34) and a cap (42) rotatably mounted on the sleeve (41) and provided with a second series of slits (40b), said cap (42) being rotatably actuatable around the longitudinal direction (35) in order to mutually align or conversely disalign the slits (40a, 40b) according to the operative or inoperative condition of the rods (34).

46. Support means according to claim 45, wherein said cap (42) is provided with a hooking element (43) for suspending the supporting means (31) and maintaining it in a suspended condition.

47. Support means according to claim 43, wherein said translation means comprises a sliding element (44) which is slidably mounted in a guided manner inside the holder (37) and rotatably supports the hinged ends of the rods (34), translating alternatively between said limit positions.

48. Support means according to claim 47, wherein said sliding element (44) is freely mobile inside said holder (37).

49. Support means according to claim 43 or 47 and further comprising an elastic reaction means (45) which structurally co-operates with said holder (37) and the rods (34) in such a way as to constantly push said rods (34) towards the closed end (39) of the holder (37), said holder (37) being able to rotate around the longitudinal direction (35) in order to align or conversely disalign the rods (34) with or from said slits (40).

50. Support means according to claim 49, wherein said elastic reaction means comprises a spring (45) housed in said tubular holder (37) and interposed between a reaction wall (46a) of said holder (37) and said sliding element (44).

51. Support means according to claim 43, wherein said first end (38) of said tubular holder (37) can be axially coupled with said elongated element (32) with a movement in said longitudinal direction (35).

52. Support means according to claim 43, wherein said first end (38) of said tubular holder (37) is slidably mounted in a longitudinally guided manner on

said elongated element (32) and an elastic reaction means (45) is housed in said tubular holder (37) and interposed between a reaction wall (46b) of the holder (37) and said constraining element (33) of said rods (34).

53. Support means according to claim 50, wherein said translation means requires said holder (37) to be mounted with a sliding coupling on said connecting element (33) of said rods (34), which is maintained in a fixed position.

54. Support means according to any one of claims 42 to 53 and further comprising forced clamping means (47, 48) operating between the holder (37) and the elongated element (32).

55. Supporting means according to claim 54, wherein said clamping means comprises a tubular body (47) which can be axially coupled between the first open end (38) of said holder (37) and said elongated element (32), and a ring nut (48) engaged with said first end (38) in order to radially force the tubular body (37) and hence clamp together the holder (37) and the elongated element (32).

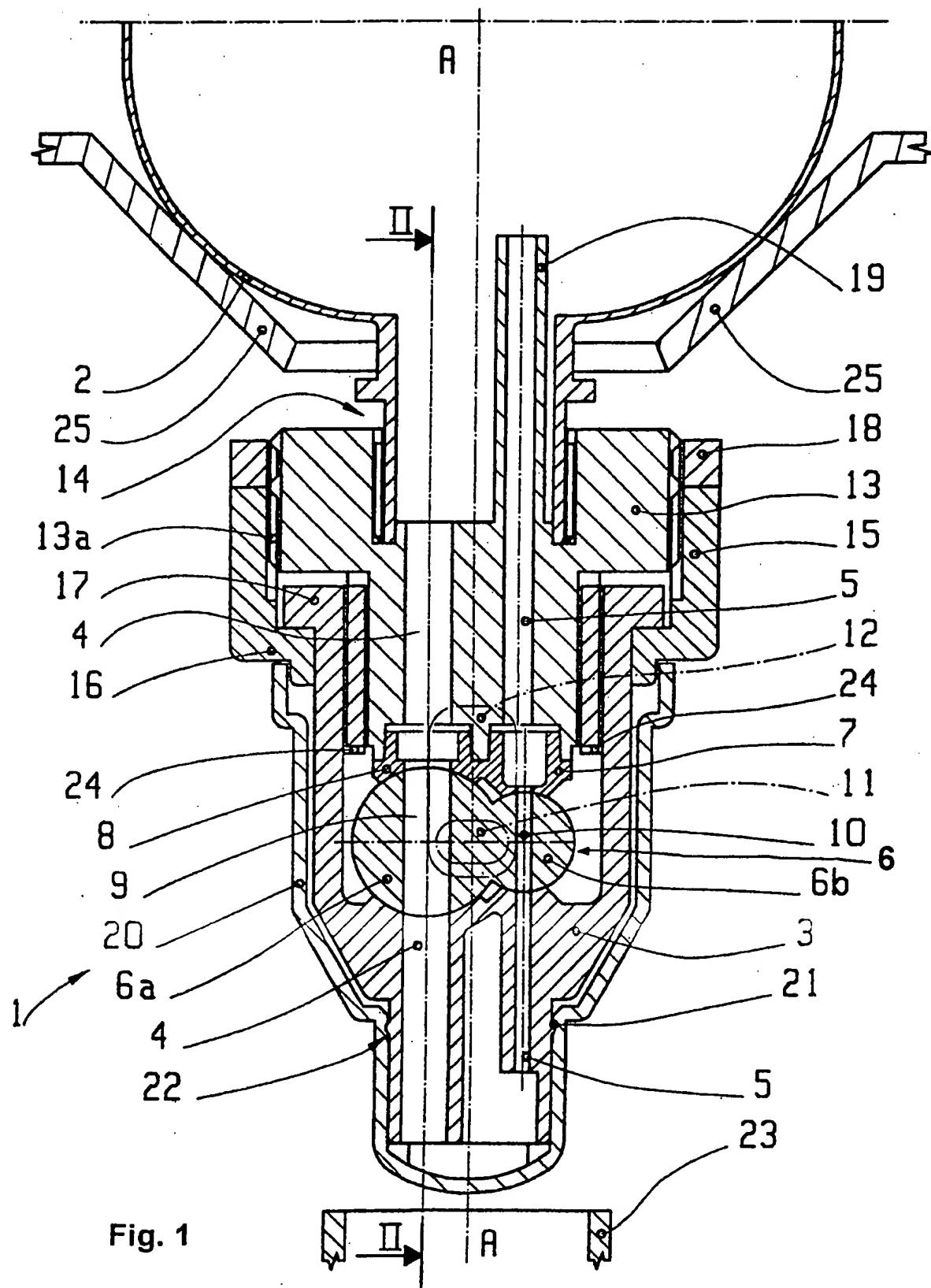
56. Support means according to any one of claims 42 to 55, and further comprising actuating means (38a) for projecting from and reintroducing into said holder (37) said rods (34).

57. Support means according to claim 56, wherein said actuating means (38a) are integrated with said elongated element (32).

58. Support means according to claim 56, or 57, wherein said actuating means (38a) is coupled with said sliding element (33).

59. Support means according to any of the claims 42 to 58, and further provided with elastic means (60) for forcibly opening said rods (34).

60. Walking aid means including a support means (31) according to any one of claims 42 to 59.



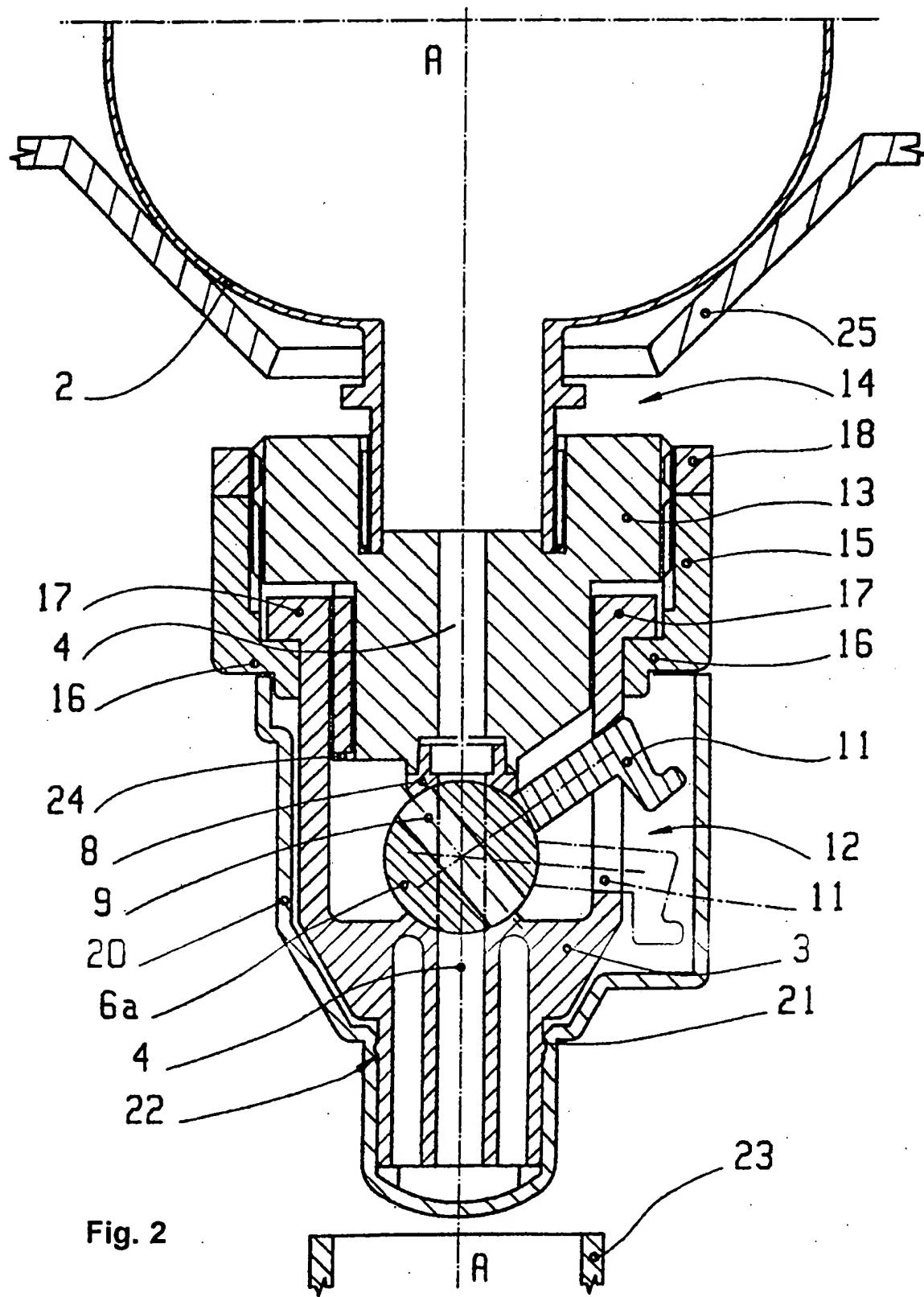


Fig. 2

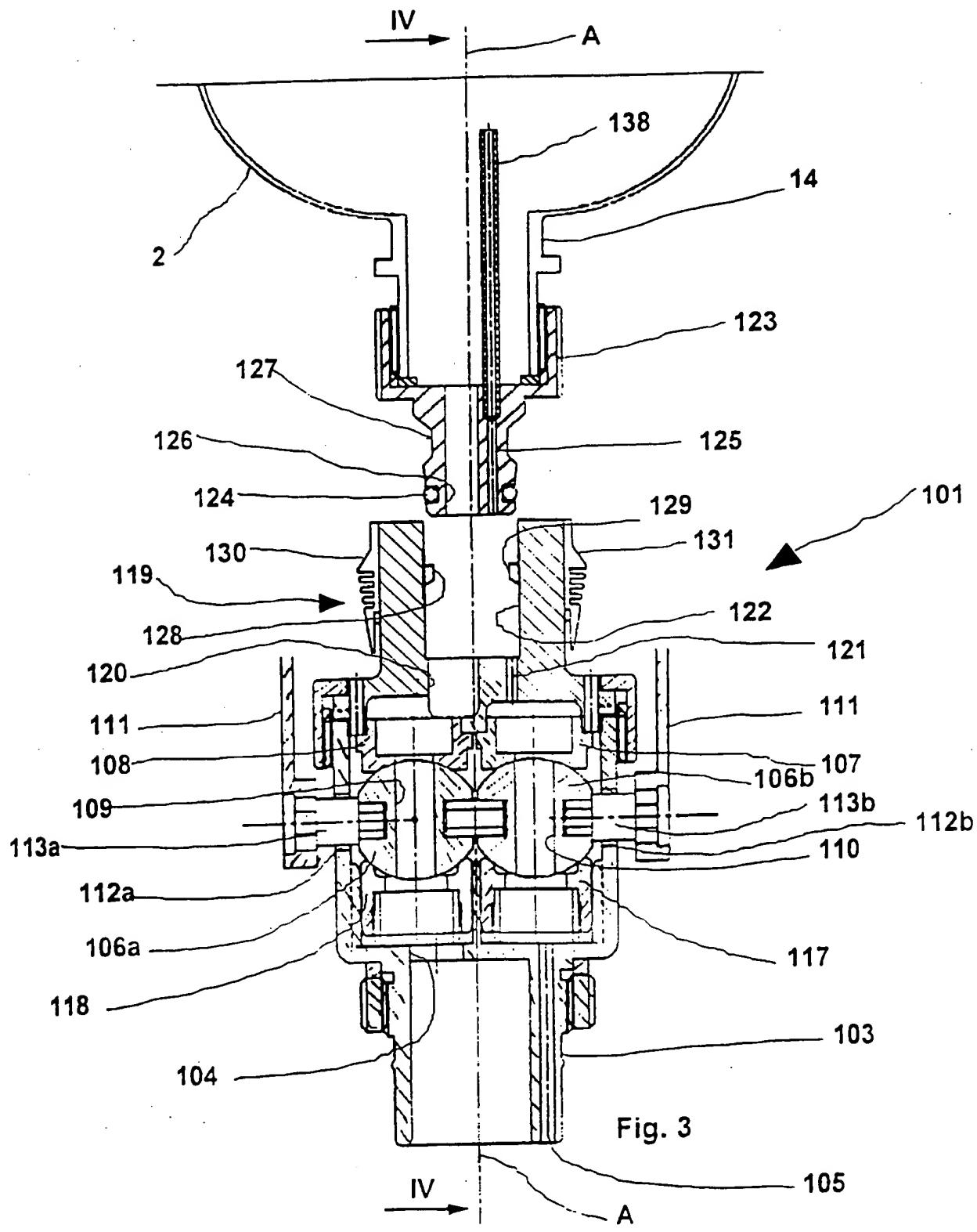


Fig. 3

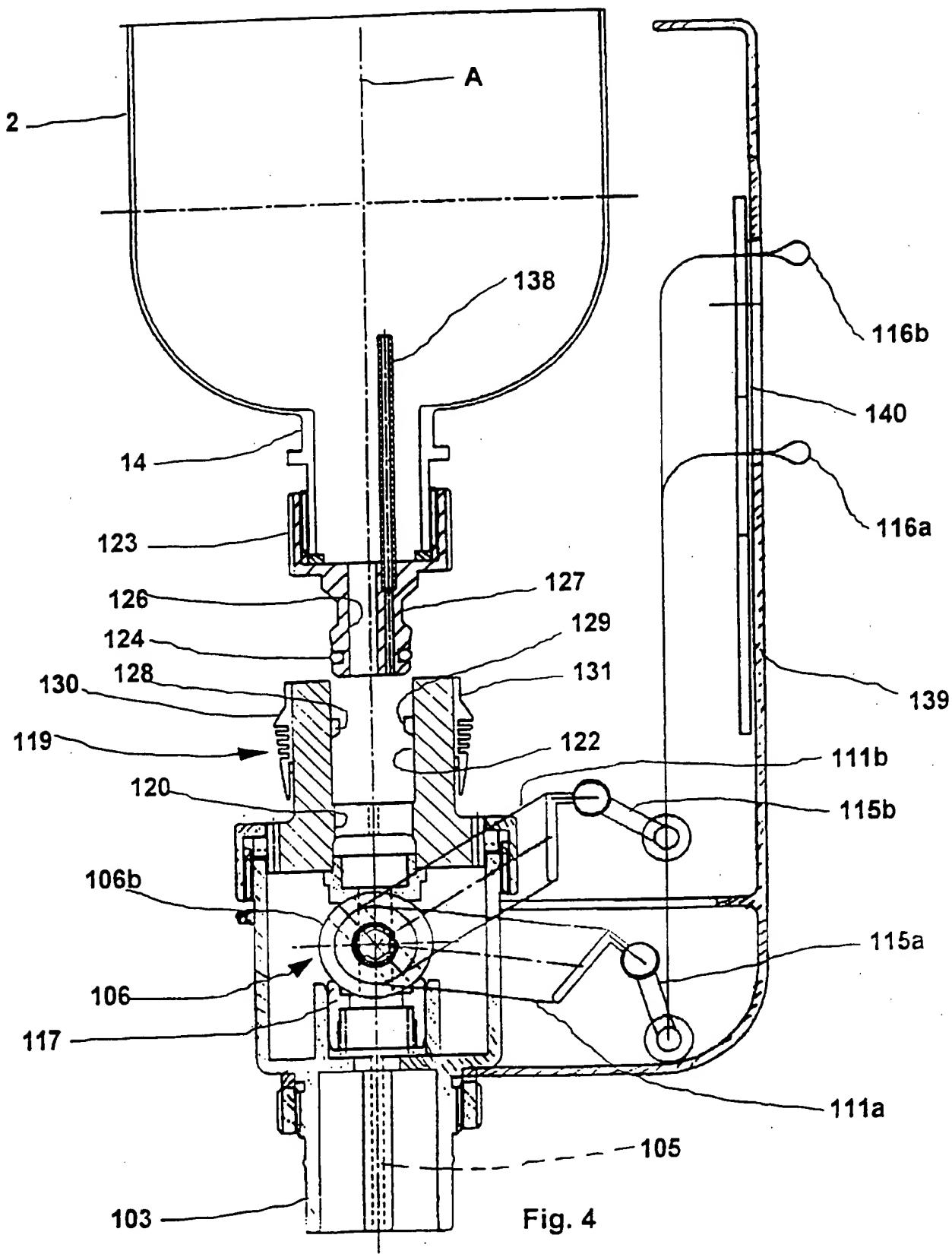


Fig. 4

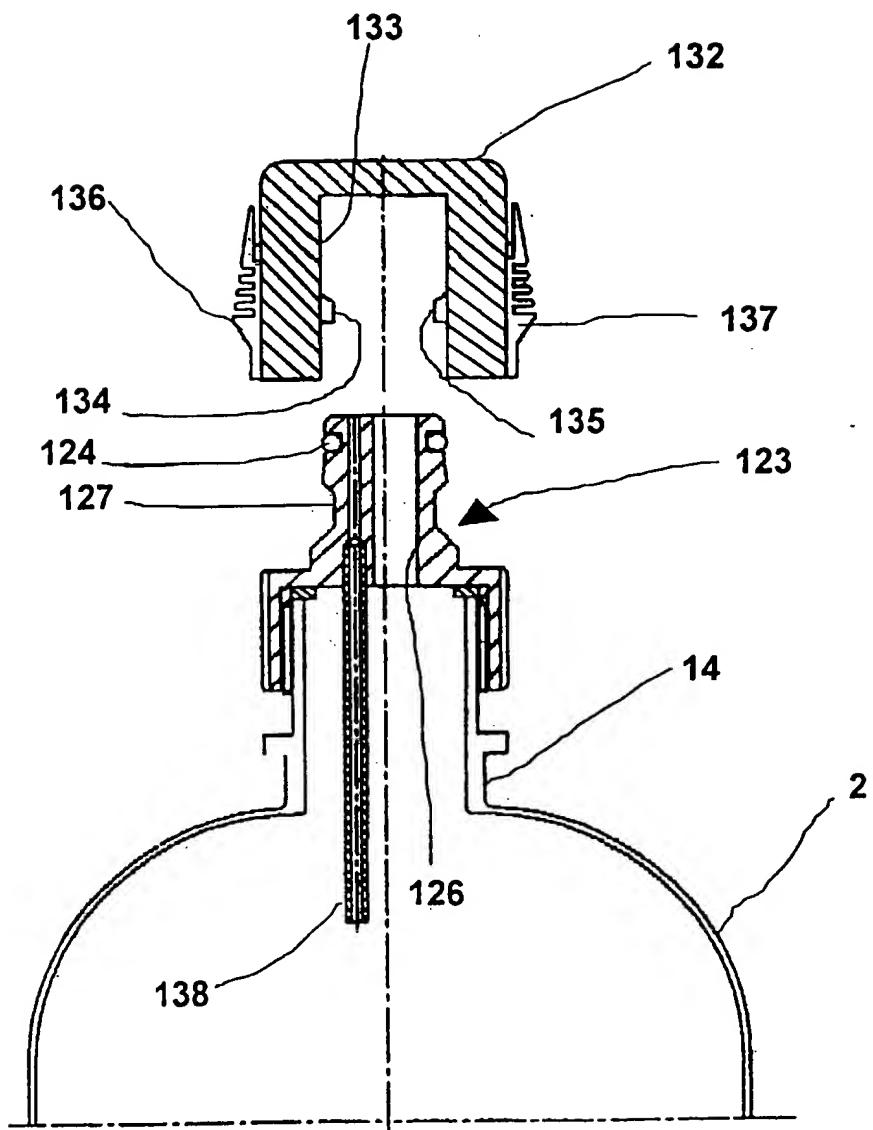
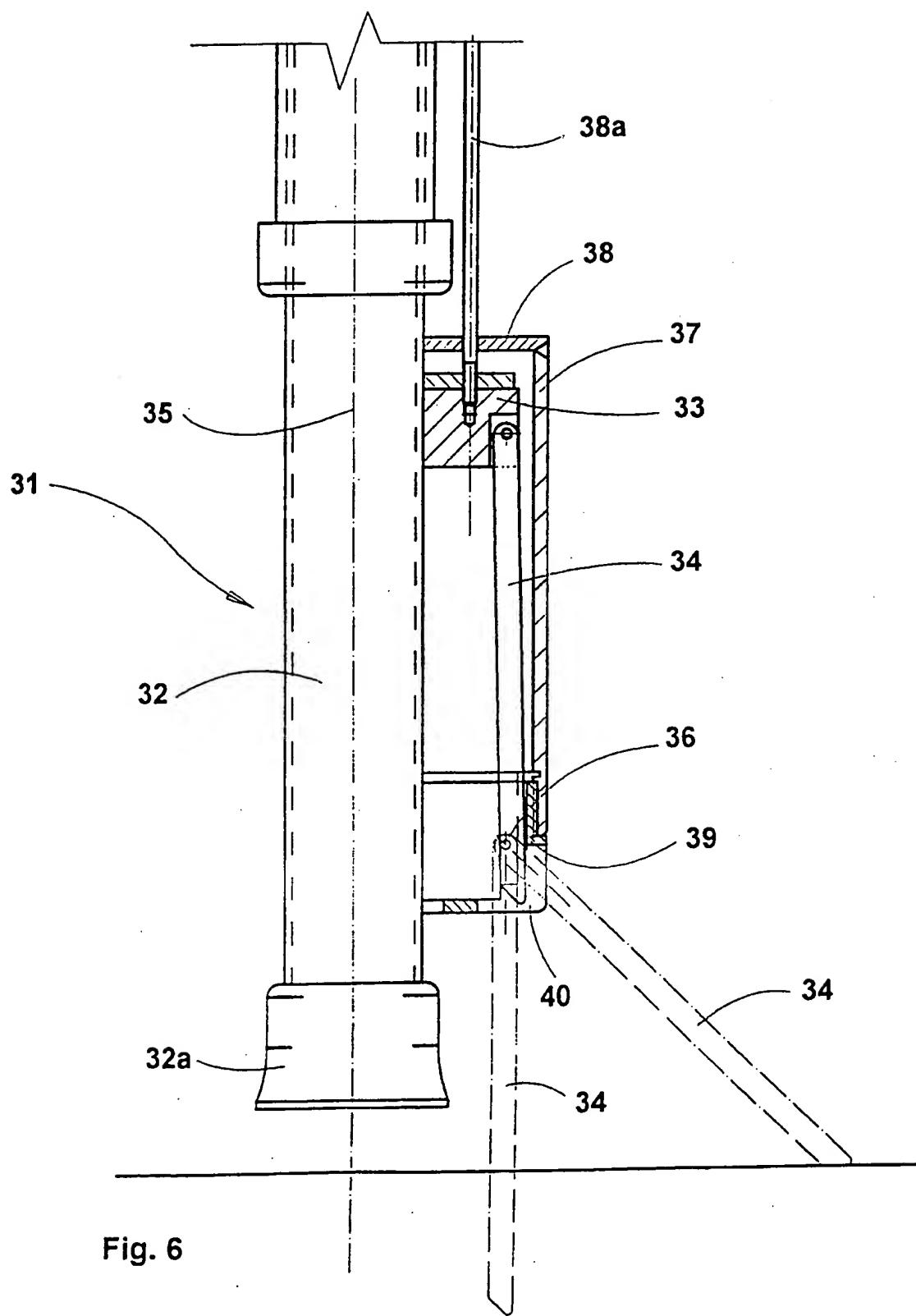


Fig. 5



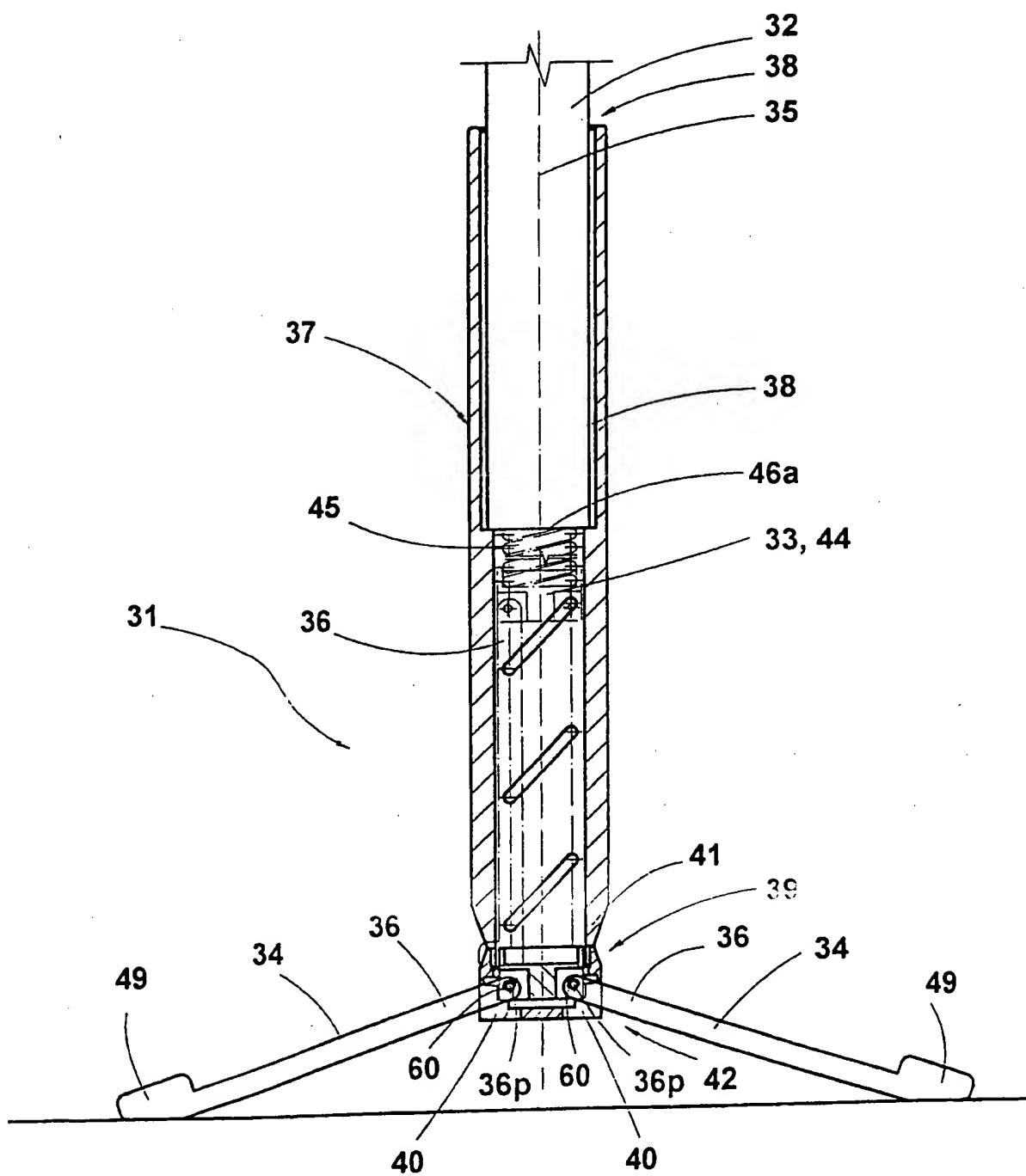


Fig. 7

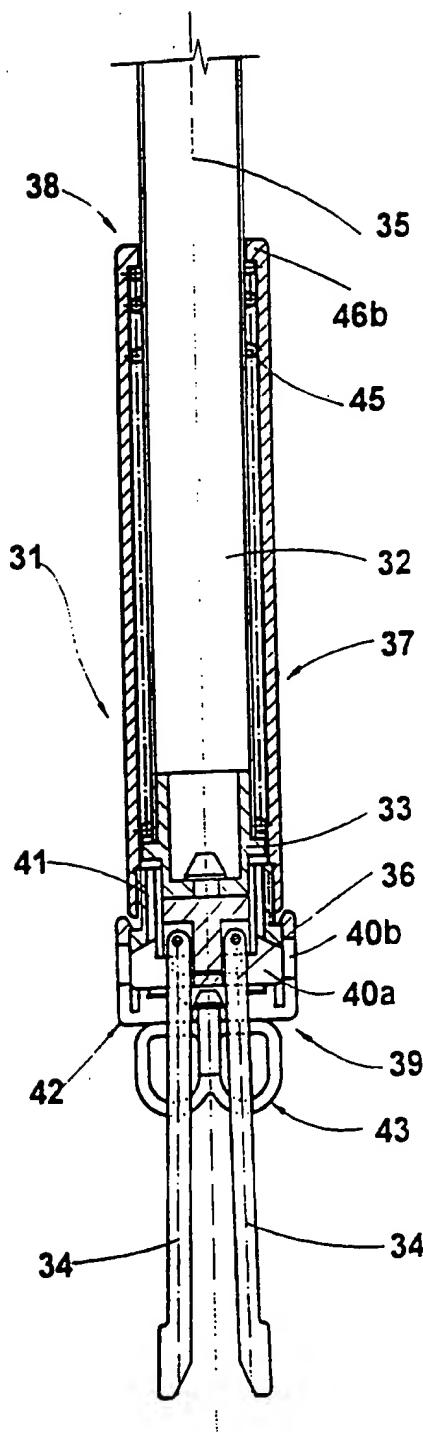


Fig. 9

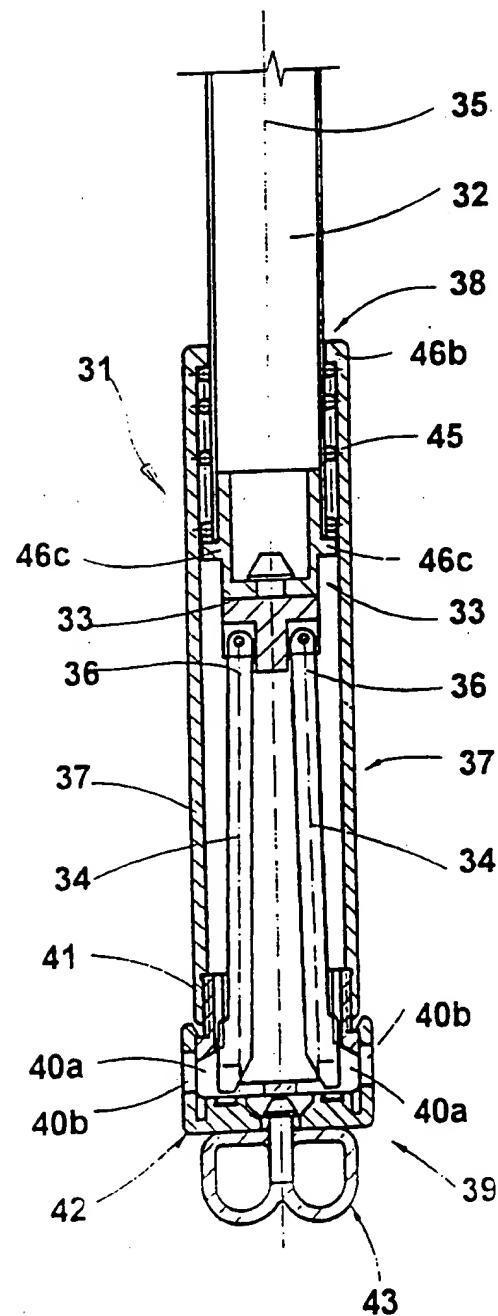


Fig. 8

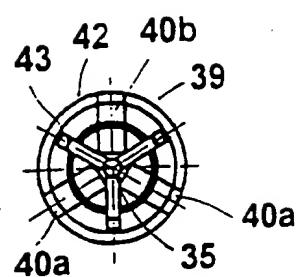


Fig. 11

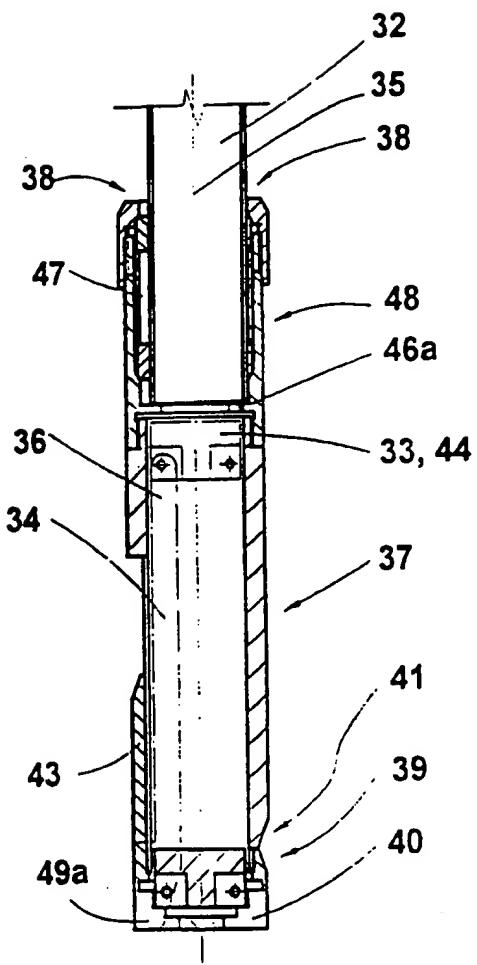


Fig. 12

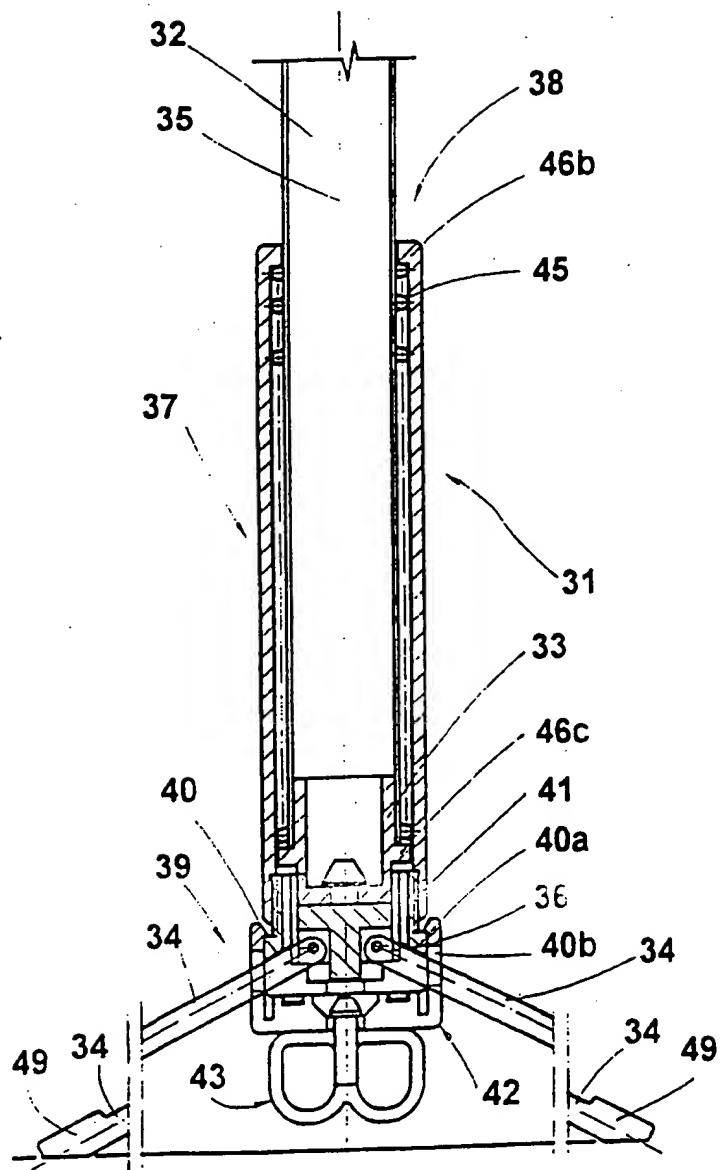


Fig. 10

